



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
---------------	-------------	----------------------	---------------------

08/421,810 04/13/95 CONRAD

B2M1/0509

CLIFFORD A POFF
P O BOX 1185
PITTSBURGH PA 15230-1185

A 20259-14	
EXAMINER	
HOLLOWAY III, E	
ART UNIT	PAPER NUMBER

9

2211
DATE MAILED:

05/09/96

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☐ This application has been examined ☒ Responsive to communication filed on 2-12-96 ☒ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), 0 days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input type="checkbox"/> Notice of Draftsman's Patent Drawing Review, PTO-948. |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449. | 4. <input type="checkbox"/> Notice of Informal Patent Application, PTO-152. |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/> |

Part II SUMMARY OF ACTION

1. ☒ Claims 49-71 are pending in the application.
Of the above, claims _____ are withdrawn from consideration.
2. ☒ Claims 1-48 have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☒ Claims 49-71 are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.
7. ☐ This application has been filed with Informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed _____, has been ☐ approved; ☐ disapproved (see explanation).
12. ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____; filed on _____.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

08/421,810
PL 328 (Rev. 2/93)

EXAMINER'S ACTION

EXAMINER'S RESPONSE

1. In response to applicant's amendment filed 2-12-96, all the amendments to the specification and claims been entered. The amendment canceled claim 1. The examiner has considered the new presentation of claims and applicant's arguments in view of the disclosure and the present state of the prior art. And it is the examiner's opinion that the claims are unpatentable for the reasons set forth in this Office action:

TERMINAL DISCLAIMER

2. The terminal disclaimer filed on 2-12-96 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US Patent No. 5,426,425 has been reviewed and is accepted. The terminal disclaimer has been recorded. The terminal disclaimer overcomes the obviousness-type double patenting and non-statutory double patenting rejections based on applicant's prior US Patent No. 5,426,425.

ART REJECTION

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 49-50, 53-55, 57-65, 67, and 69-70 are rejected under 35 U.S.C. § 103 as being unpatentable over US Patent No. 4,990,892 (Guest) in combination with US Patent No. 5,363,425 (Mufti) and US Patent No. 3,403,381 (Haner).

Guest discloses a personnel locating system with transmitters sending bursts to receivers at distinct burst

periods to prevent synchronization. Each transmitter uses a different or divers period. The transmitters can be carried by people in order to locate them which is all that is required by the claiming of person, animal, or equipment in an alternative manner. Each transmitter uses a different or divers period. The transmitters can be carried by people in order to locate them which is all that is required by the claiming of person, animal, or equipment in an alternative manner. Each transmitter in Guest sends at specified periods rather than the varying intervals of claim 49. Guest does not specify using an algorithm.

Mufti discloses an analogous art identification system which includes transmitters having microcontrollers which are provided with software or algorithms to provide the transmitter functions.

Haner discloses a system directed to preventing interferences between transmitters similar to Guest, but uses randomly varying repetition times rather than fixed times.

Regarding claims 49 and 65, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the functions of the Guest transmitter in response to an algorithm or software as described by Mufti since a software programmable device is easier and cheaper to mass produce and provides flexibility because the software can be modified to provide different functions. Alternatively, The transmitter in Mufti could have been modified to send infrared bursts as described by Guest which have advantages over RF transmission such as not requiring FCC licensing. It further

would have been obvious to have included randomly specifying the transmission intervals as described by Haner which is advantageous for reducing interference when the number of transmitters is so large that they cannot each be assigned to a separate transmission interval. It would have been obvious to have specified the random period by an algorithm since the random pulses generator of Haner outputs a pulse at random times which is a representation of a random number provided by a randomizing algorithm and further because Mufti suggest using software or algorithms to provide all the transmitter operating functions (col. 7, lines 4-9) and Mufti describes random intervals for the burst transmission in col. 8, lines 1-3.

Regarding claim 50, Mufti discloses a microcontroller (61) responding to software or algorithms as discussed above.

Regarding claim 53, Guest discloses a unique sixteen bit binary codeword in col. 2, line 20, and it would have been an obvious design choice to extend this to any number of binary bits, such as 20 bits, in order to allow additional unique IDs for additional transmitter units up to 2 raised to the 20th power = 1048576 units.

Regarding claim 54, the 20 millisecond burst is an obvious design choice which is suggested by the 55 millisecond burst period of Guest (cols. 8-9) which is at least of the same magnitude.

Regarding claim 55, the random intervals of Haner is between .5 and 1.5 seconds which would amount to an average interval of

about one second.

Regarding claim 57, Guest includes a transmission of two infrared pulses of 5 microsecond duration for a total transmission (high level) of 10 microseconds in col. 9, lines 50-52) which at least suggest a 10 microsecond flash.

Regarding claim 58, a plurality of receivers with allowable reception range overlap is described in col. 5, lines 1-26 of Guest, and Mufti includes validation aided by a CRC as discussed above.

Regarding claims 59-60, Guest includes an up to date registry and detecting presence and continued present in col. 3, lines 9-24 which corresponds to validating IDs and forming start and stop events when detected and lost.

Regarding claim 61, Guest includes connections between the central computer (44) and the gathering means (34) and it would have been obvious for these to include a plurality of serial ports since such is commonplace in the computer art.

Regarding claim 62, a terminal and keyboard for accessing data are commonplace in the art and are typically provided by a PC or workstation such as the workstation (18) of Mufti discussed in col. 5, lines 28-42 for accessing database (17).

Regarding claim 63, a display means for indicating reports stored at a central computer is commonplace in the computer art and is provided by the workstation of Mufti discussed above and/or the registry discussed in col. 3, lines 1-35 of Guest.

Regarding claim 64, Guest includes a hospital environment

with communication to existing nurse stations as discussed in col. 3, lines 9-21 and col. 10, line 66 - col. 11, line 15.

Regarding claim 67, Mufti discloses a CRC error correction word discussed above.

5 Regarding claim 69, the CRC of Mufti is considered to be a binary checksum.

Regarding claim 70, the receiver of Mufti validates the CRC (col. 8, lines 59-60), and it is commonplace to validate the CRC by recalculating and comparing the CRC values.

10 5. Claims 49-65, and 66-71 are rejected under 35 U.S.C. § 103 as being unpatentable over US Patent No. 4,990,892 (Guest) in combination with US Patent No. 5,363,425 (Mufti) and US Patent No. 3,403,381 (Haner) as applied above to claims 1, 49-50, 53-55, 57-65, 67 and 69-70 and further in view of US Patent No.
15 5,206,637 (Warren).

Regarding claims 49-50, 53-55, 57-65, 67 and 69-70 if the algorithm limitation is interpreted to required a microcontroller with memory and microcode, then Warren suggests that such is obvious for the reasons stated below.

20 Regarding claim 51, Guest, Mufti, and Haner include unique ID's or addresses for the transmitters, and Mufti includes a microcontroller in the transmitter, but Mufti does not specify that the microcontroller includes a memory containing the unique address. Warren discloses an access system with a
25 microcontroller connected to a memory for storing access codes. See col. 4, lines 46-54. It would have been obvious to one of

ordinary skill in the art at the time the invention was made to have included the ID stored in memory associated with the microcontroller as taught by Warren in the combination applied above since this would provide flexible (programmable) ID storage, and it further would have been obvious for this memory to be inside the microcontroller since making elements integral/separable and change in location of parts has been established to be obvious by case law.

Regarding claim 52, Mufti describes that the software instructions of the microcontroller provides for generations of a signal as shown in fig. 9 and col. 8 including a preamble (start bits), a binary ID code, and a CRC (checksum), but does not specify "microcode." Guest includes a unique 16 bit binary codeword with start bit and parity. Warren discloses microcode for providing the instructions of the microcontroller (col. 4, lines 46-50) Therefore it would have been obvious to have included the transmission instructions of Mufti in microcode which is suggested by Warren to be an equivalent terminology for the instructions of the microcontroller of Mufti.

Regarding claim 56, Mufti describes that the software instructions of the microcontroller in the receiver provides for validation of the received codes including the CRC shown in fig. 8 and col. 7. but does not specify "microcode." Warren discloses microcode for providing the instructions of the microcontroller (col. 4, lines 46-50) including comparing and validating access codes. Therefore it would have been obvious to

have included the receiver instructions of Mufti in microcode which is suggested by Warren to be an equivalent terminology for the instructions of the microcontroller of Mufti.

Regarding claim 71, the receiver in fig. 8 of Mufti includes
5 a microcontroller (82) which provides the validation and Warren teaches microcode as discussed above.

6. Claims 66 and 68 are rejected under 35 U.S.C. § 103 as being unpatentable over US Patent No. 4,990,892 (Guest) in combination with US Patent No. 5,363,425 (Mufti) and US Patent No. 3,403,381
10 (Haner) and US Patent No. 5,206,637 (Warren) as applied above to claims 1, 49-65, 67 and 69 and further in view of the "Understanding Data Communications" book by Radio Shack.

The Radio Shack book describes using multiple bits per baud in order to increase the signalling rate on a channel with a
15 limited bandwidth that causes a fixed maximum baud rate. This can be implemented by providing a dibit in which two bits are communicated by each modulated pulse or sine wave depending on the phase shift (position) of the wave as shown in table 5-4 or 5-6. Regarding claim 66, it would have been obvious to one of
20 ordinary skill in the art at the time the invention was made to have included a dibit in the combination applied above because the Radio Shack book states that this provides advantages such as an increased signalling rate.

Regarding claim 68, it further would have been obvious to
25 have provided the dibit for the CRC for the same reasons discussed above.

REMARKS

7. Applicant's arguments filed 2-12-96 have been fully considered but they are not deemed to be persuasive.

Reference to claim 1 has been removed from the rejections
5 because claim 1 has been canceled.

Applicant's traversal of the double patenting rejection is moot in view of the terminal which overcomes the rejection.

Applicant's argument that the Mufti patent is non-analogous art is not persuasive. Applicant's invention is directed to a
10 locating and monitoring system for a person, animal or equipment and since Mufti is directed to a personal locating and asset tracking system it is clearly analogous art. Applicant points out that Mufti differs from applicant's invention and then
15 incorrectly concludes that this makes the reference non-analogous. Because of these differences, Mufti does not anticipate applicant's claims, but the difference do not make the reference non-analogous and the combination of reference shows that these difference would have been obvious to one of ordinary skill in the art at the time the invention was made. Although
20 applicant does not specifically provide reasons why any of the other reference are non-analogous, the examiner asserts that they are analogous and/or within the same field of endeavor because Guest and Warren are directed to locator systems and Haner and the Radio Shack book are directed to data communications which
25 are considered to be within the field of knowledge of the artisan in the wireless locator art. Further, Haner is directed to

variation of response time to prevent interference or
synchronization between a plurality of transmitters which is
reasonably pertinent to the problem being solved by applicant.
Therefore the applied references comply with the determination
5 analogous art set forth in *In re Wood*, 202 USPQ 171, 174.

Applicant's discussion of only details of the Mufti patent
is considered to be an improper piecemeal analysis of the
rejections based on a combination of references. In response to
Applicant's piecemeal analysis of the references, one cannot show
10 non-obviousness by attacking references individually where, as
here, the rejections are based on combinations of references.

The argument that unlike Mufti, "applicant's claims 49 and
65 call for the occurrence of each pulse burst in time relative
to the start of each time interval varying under the control of
15 the means responsive to the algorithm and using the unique binary
identification code of that transmitter to prevent
synchronization with other transmitters" is not persuasive.
Claim 49 includes language substantially similar to the above,
but claim 65 does not and therefore applicant's argument is not
20 commensurate with the scope of the claims. Also, applicant is
reminded this rejection is based on a combination of references
and not on Mufti alone. Varying of the interval is provided by
the "random" interval discussed below which when provided by a
software (algorithm) driven microcontroller as in Mufti is
25 considered to be provided by a means responsive to an algorithm
which also provides a binary ID code (92 in fig. 9) which

prevents synchronization or interference.

Applicant's argument with reference to Mufti asserts that the applicants disclosure does not include "random" intervals for burst transmission but is controlled by an algorithm which is the opposite. This is not persuasive. Mufti discloses transmitting at random intervals in col. 8 line 1 and since all the transmitter functions in Mufti are provided by the microcontroller (61) which operates on algorithms, then the random interval is a variation of the response interval making the microcontroller equivalent to applicant's means responsive to an algorithm to control varying of the interval. To separation from other transmitters, each transmitter microcontroller would require unique information for the random transmission which would be in binary form and therefore present a unique binary code. Further, the random pulse generator of Haner provides random pulses in a predetermined manner (recur periodically within predetermined time limits in col. 6, lines 29-41) which is equivalent to applicant's means responsive to an algorithm for transmitting bursts at varying intervals for the same purpose of preventing interference or synchronization of a plurality of transmitters. Haner discloses that many techniques for producing random pulses are available. One known technique is to use a pseudo random number generating algorithm responsive to an input code such as a seed. Regarding the means responsive to the algorithm being responsive to an address in memory, such is shown to be obvious by Warren as applied in the rejection of claim 51.

In response to Applicant's argument that the Examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgement on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. *In re McLaughlin*, 443 F.2d 1392; 170 USPQ 209 (CCPA 1971).

Regarding the argument that it is improper to select features, to select features from the prior art to effect results expected from these features is within the purview of 35 U.S.C. § 103. See *In re Skoner*, 186 USPQ 80 (CCPA 1975).

In response to Applicant's argument that there is no suggestion to combine the references, the Examiner recognizes that references cannot be arbitrarily combined and that there must be some reason why one skilled in the art would be motivated to make the proposed combination of primary and secondary references. *In re Nomiya*, 184 USPQ 607 (CCPA 1975). However, there is no requirement that a motivation to make the modification be expressly articulated. The test for combining references is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art. *In re McLaughlin*, 170 USPQ 209 (CCPA 1971). References are evaluated by what they suggest to one versed in the art, rather than by

their specific disclosures. In re Bozek, 163 USPQ 545 (CCPA) 1969. In this case, Haner discloses varying the response times of different transmitters to solve the problem of interference or synchronization which is the same problem solved by applicant.

5 Where it is not practical to synchronize the multiplexing of the transmitters to particular time slots for each transmitter as in Guest or where there are too many transmitters to provide separate time slots for each, the technique of Haner minimizes the probability that signals will collide.

10 Applicant's assertions that the references are non-analogous, that hindsight is used and that the references themselves must provide some teaching of the combination are not persuasive for the reasons stated above. Further, the examiner contends that general arguments traversing the rejection and
15 asserting patentability cannot be persuasive. Applicant must point out the particular novelty which avoids the applied references.

CONTACT INFORMATION

20 8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edwin Holloway whose telephone number is (703) 305-4818.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4900.

25 Edwin C. Holloway
05-07-96

Edwin C. Holloway
EDWIN C. HOLLOWAY, III
PATENT EXAMINER
GROUP 2200